DOCUMENT RESUME

ED 451 649 EC 308 332

AUTHOR	Davis, Cheryl D.
TITLE	You Don't Know What You've Been Missing! Alerting and Signaling Devices.
INSTITUTION	Western Oregon Univ., Monmouth. Northwest Outreach Center.
SPONS AGENCY	Western Region Outreach Center and Consortia, Northridge, CA.; Office of Special Education and Rehabilitative Services (ED), Washington, DC.
PUB DATE	2000-09-15
NOTE	13p.
AVAILABLE FROM	Northwest Outreach Center, Regional Resource Center on Deafness, Western Oregon University, Monmouth, OR 97361. Tel: 503-838-8642 (Voice/TTY); Fax: 503-838-8228; e-mail: nwoc@wou.edu; Web site: http://www.wou.edu/nwoc.
PUB TYPE	Reference Materials - Directories/Catalogs (132)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	*Accessibility (for Disabled); *Assistive Devices (for Disabled); *Communication Aids (for Disabled); Deaf Blind; *Deafness; Equipment; *Hearing Impairments; Safety; Telephone Communications Systems

ABSTRACT

This publication describes assistive devices to help convert auditory signals to signals that are accessible to persons who are hard of hearing, deaf, or deaf-blind. Introductory material describes the four regional centers making up the Postsecondary Education Programs Network. Each descriptive page includes photographs and prices as well as examples of uses of particular devices. Descriptions cover telephones, door announcers, timers, alarm clocks, remote devices, hearing dogs, and automobiles. Some of the specific items described are flashing lights (for ringing telephones), telephone jacksplits, the doorbell, timers, alarm clocks, smoke alarms, crib monitors, door announcers, audio alarms, motion sensors, personal receivers, Web sites for information on hearing dogs, automobile emergency vehicle alert, turn signals, mirrors, and mobility reimbursement programs. Other information includes guidelines for evaluating one's needs, alternative sources, and relevant statutes. Further information including detailed contact information for the Northwest Outreach Center completes the publication. (DB)

Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 451 649

You Don't Know What You've Been Missing

Cheryl D. Davis, Ph.D.
Northwest Outreach Center
Western Oregon University

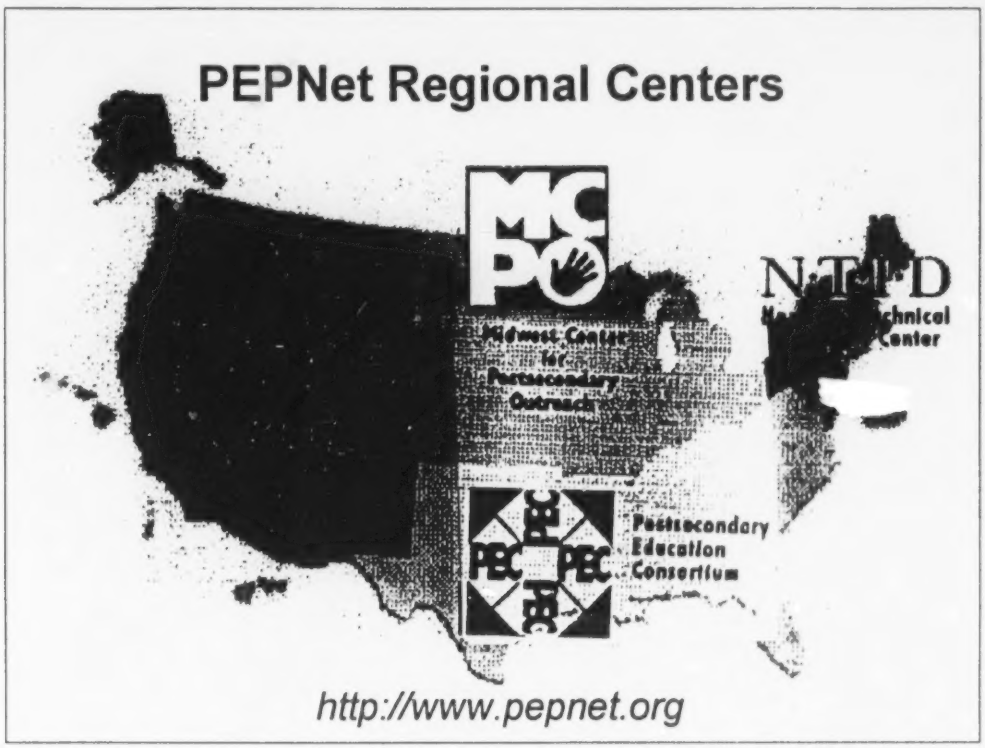
A parent worries about being able to hear the baby's cry, family members become concerned when a loved one doesn't answer the phone, one's social life becomes constricted because the door goes unanswered, co-workers worry when another worker doesn't notice alarms in the building. We often think of hearing loss in terms of the issues that it creates around being able to hear and understand speech. But our hearing also alerts us to other events or dangers in our environments. In fact, many hard-of-hearing persons complain of fatigue from constantly being on 'high alert.' This module looks at a variety of assistive devices that help to convert sound to signals that are accessible to persons who are hard of hearing, deaf, or deaf-blind.

Prices cited in this module are from the LS&S company catalog. Consumers are encouraged to shop around and compare prices, warranties, services, and options before purchasing. A list of companies selling assistive equipment, their phone numbers and web pages is available on the Northwest Outreach Center website at http://www.wou.edu/nwoc/ald.htm#companies.

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

BEST COPY AVAILABLE

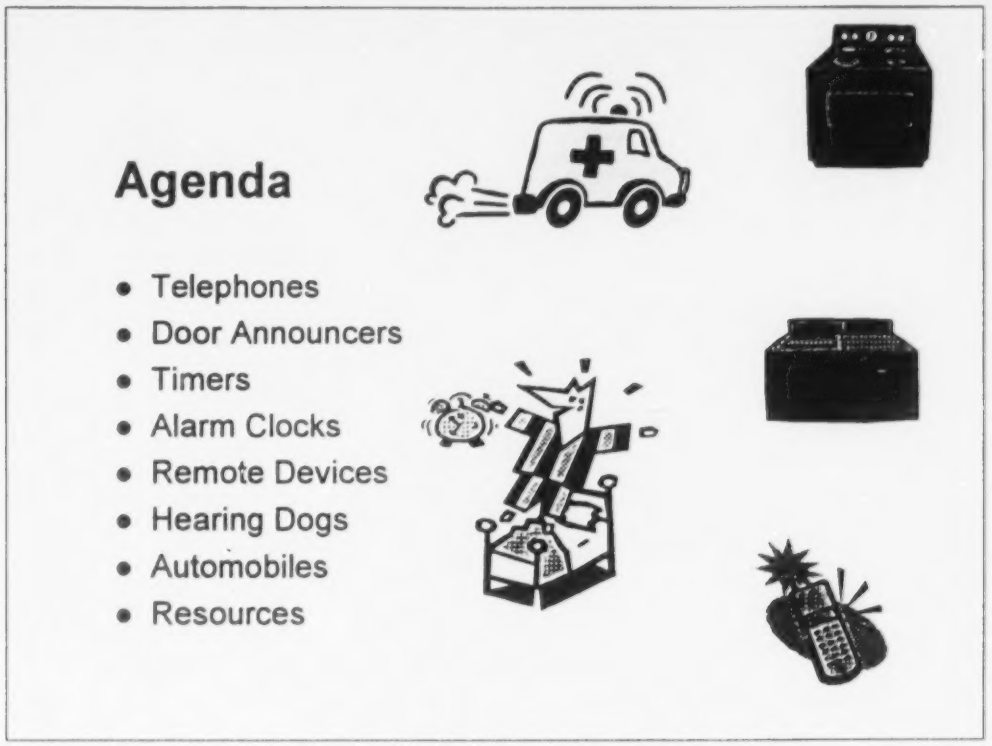
EC 308332



This module was developed by the Northwest Outreach Center (NWOC). NWOC is funded through a subcontract from the Western Region Outreach Center & Consortia (WROCC). It is one of WROCC's (http://wrocc.csun.edu) five hub and affiliate projects making up a network of programs serving the western United States and its territories. The National Center on Deafness (http://ncod.csun.edu), located at California State University, Northridge, hosts the PEPNet Resource Center (PRC), in addition to WROCC. PRC, which can be accessed through the website http://prc.csun.edu, is an invaluable resource for educators, disability services coordinators, vocational rehabilitation counselors, and other service providers seeking to provide and improve accommodations for students and clients who are deaf or hard of hearing. Most materials are available for free from the internet site, others, such as videos, are available for a minimal fee.

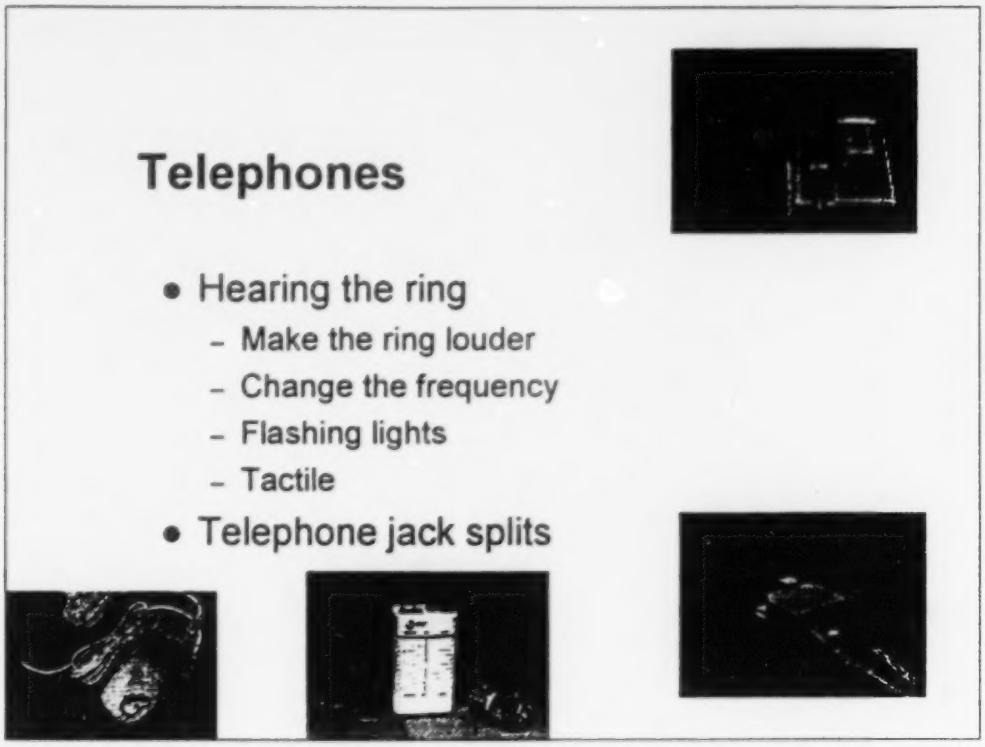
WROCC is one of four regional centers making up the Postsecondary Education Programs Network (PEPNet). Through this network, technical assistance is provided to postsecondary institutions across the country. Check out the PEPNet website http://www.pepnet.org for training materials and activities, and to locate the regional center serving your area. PEPNet is funded in part by the US Department of Education, Office of Special Education & Rehabilitative Services.

BEST COPY AVAILABLE



At home, work, or play, we all need to be aware of the signals coming from our surroundings. Most auditory signals can be made louder, converted to a different frequency to suit individual hearing needs, or converted to a visual or tactile signal.

A wide variety of devices will be covered, including telephones, timers, alarm clocks, fire alarms, and devices for the car. Multipurpose devices will also be covered, including remote systems. Finally, a variety of resources are provided, along with information on where to find the devices, alternative funding sources and laws supporting the provision of accommodations.

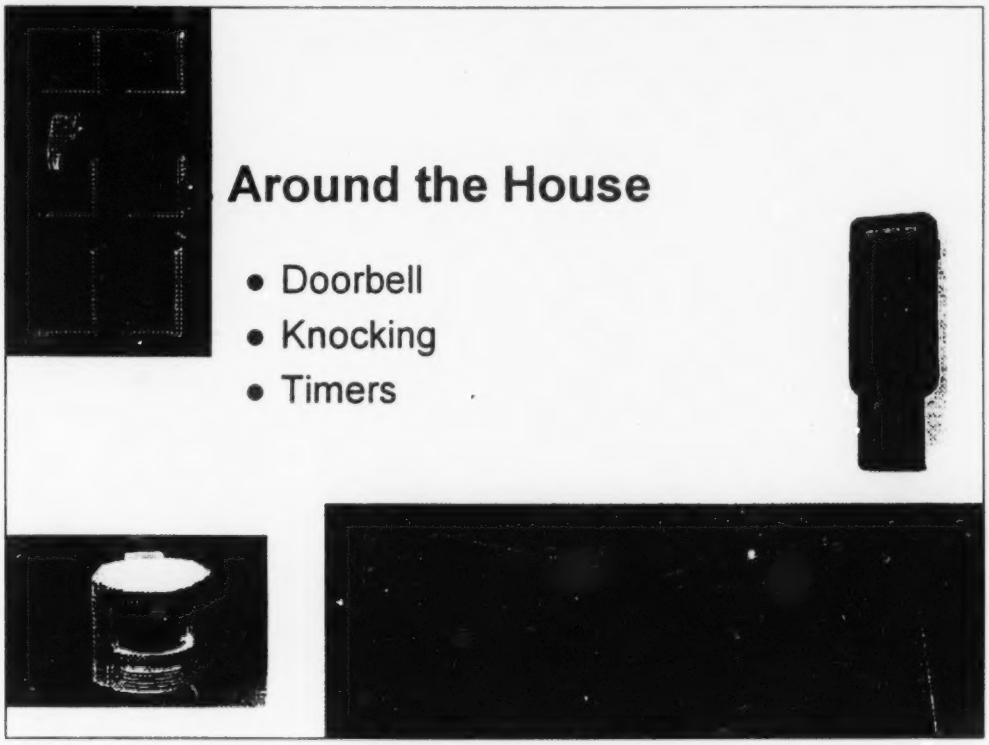


Telephones help to keep us connected both at home and at work. An individual who is having problems hearing may not be able to hear the phone ring, or may only be able to hear it if she is close to it. The environment may be noisy making it difficult to pick out the ring of the phone from other sounds. Individuals with a high frequency hearing loss can only hear lower pitches and experience a great deal of difficulty hearing the softer ring of newer phones.

One option is to alter the ring so that it is much louder (up to 95dB) (loudness depends upon distance from the sound. At 10 feet, the loudness may measure 95 dB. If you are in a different room, the sound level will be much softer.). Many of these devices also have a tone control, so that you can adjust the pitch of the ring depending on the frequencies affected by the individual's hearing loss. These devices run about $15-$45. The top right pictures shows one plugged into a phone.

Some require batteries or an AC outlet, and some do not (they plug into the phone or the wall jack). In order to have both the phone and the loud ringer plugged into the same phone jack, a "y" connector or a "split jack" can be used (bottom right). These plug into the phone jack and allow you to plug more than one device into them. They can be found at electronics, home improvement, and even grocery stores for a few dollars apiece. Availability of outlets, desk space, and keeping batteries charged are issues to consider before making a purchase.

What if you cannot hear the louder ring, or if you live in a place where others are disturbed by the loud ring? There are also devices that connect between the phone and a lamp, so that when the phone rings the light flashes (bottom left corner and center, about $20 to $50). This may be perfect in a small office, where the flashing light would be visible anywhere. (Some have an option so that you can use the lamp for light, as well. With less expensive ones, the lamp will only work as a signaler and cannot be used for lighting.) (A training module about telecommunication options for deaf and hard of hearing individuals is available from NWOC. See information at the end of this module.)

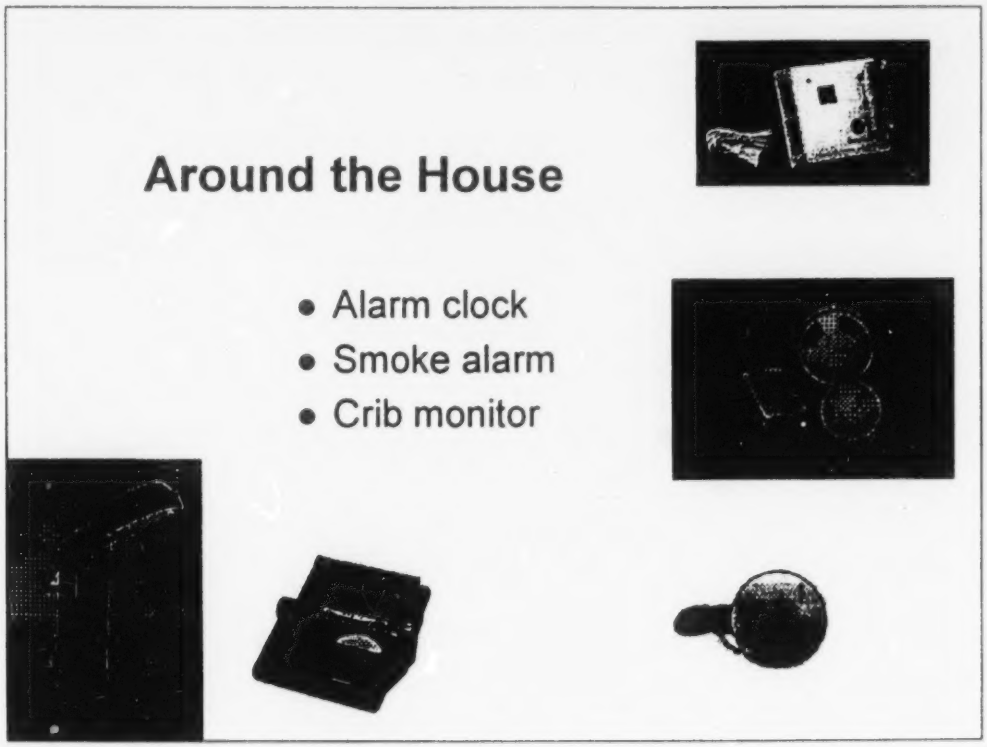


Just as with the ringing of the phone, there are other sounds in our environment that let us know action is called for, such as answering the door, or taking something out of the oven.

In some cases, a timer can be worn or carried, as in setting the alarm on a vibrating watch or small timer (top right image). These sell for as little as $13.00. Some have very small buttons on them, though, and persons with dexterity problems may have trouble setting them. These timers are very versatile. A parent can set the timer for a hard-of-hearing child. The child can then go off to the playground and have more independence. The parent doesn't have to worry about not being able to yell to remind the child that it's time to come home. A traveler could use the timer in her pillow as an alarm clock..

There are a variety of signaling devices designed for special purposes. For example, the Door Beacon (bottom left and right) (approximately $30.00) hooks over the top of the door. When someone knocks on the door, the vibrations cause the Door Beacon to flash. These are often used in small spaces, such as dorm rooms, offices, and hotel rooms. These are not as effective in bright rooms because the light wouldn't be noticeable.

Battery-operated remote door systems are available in many electronics stores for under $30.00. The doorbell is screwed into the outside wall, the doorbell ringer or receiver plugs into an AC outlet in the house or office. These are nice for mild hearing losses, where individuals can hear the sound as long as they are close to the source. Other remote units contain an outlet for a lamp to be plugged in, so that when the doorbell is pushed, the lamp flashes. Another creative use of the system is to turn the doorbell into a pager. If Jim's wife were ill, she would not be able to get his attention by calling to him. By leaving the doorbell with her, she can press it to flash the lights in another room to get his attention.



The bottom images are examples of alarm clocks and accessories. The alarm on the left has a reading light, a jack for a bedshaker (bottom right) and for the phone ($80.00). Bed shakers (often sold separately, $20 to $50 depending on the size) are placed under the pillow or under the mattress and vibrate when the alarm goes off. Some have an option to plug in a lamp. The alarm will cause the lamp to flash and/or the bedshaker to vibrate. Being able to plug the bedroom phone into the alarm clock means that you can save countertop space, as well as knowing that you won't miss a call if you are in bed with your hearing aids off. There are a variety of other options available on the different alarm clocks, including loud alarms (90-120 dB), and jacks for the phone (from $15 to $50).

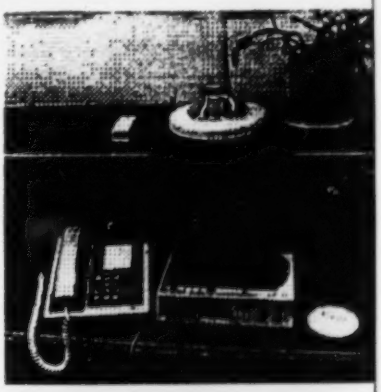
Some individuals find that a flashing light does not wake them up. This may be true for individuals who have a vision loss in addition to a hearing loss. An alternative to using the bed shaker is to use a fan. On some alarm clock models a fan can be plugged in instead of a lamp. The fan would be activated and blow on their faces when the alarm goes off.

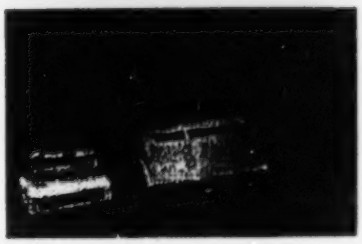
Smoke alarms (top and center right) may be hard wired into the home (recommended) or run off batteries or AC. Smoke alarms with flashing lights and 90 dB horns (at a distance of 10 feet) run around $120.00. Some smoke alarms include remote unit and a jack for a bed shaker.

Inexpensive crib monitors have been put to creative use by individuals with mild and moderate hearing losses to alert them to other sounds in the home. The transmitter (mic) part of the monitor can be put next to timers or other alarms, and the receiver is in the room with the individual. The receiver has a volume control that can be adjusted, so that the individual can be in a different room and still be alerted to alarms and timers.

Getting Wired

- Remote devices
  - Door announcer
  - Audio alarm
  - Baby monitors
  - Motion sensors
  - Personal receivers





Although lights or auditory signals are extremely helpful, one drawback is location. The individual must be able to see the light flashing, or be near enough to the device that he or she will be able to hear it. This problem can be easily overcome with a multipurpose remote device. Some single and dual purpose devices were discussed earlier, such as the door announcer, fire alarms, or doorbell/phone. But others can be set up in the home to cover multiple needs. Some systems are hardwired, but others are simply plugged into electrical outlets. Transmitters (usually working off of FM or RF signals) can alert the user to a variety of household sounds, such as the door bell, phone, smoke alarm, a baby crying, a kitchen timer or an alarm clock. Multiple receivers can be purchased and placed in different rooms. Flash patterns are different patterns for each of the different alarms for easy identification of the source.

For example: Jim has a receiving unit in his bedroom, and a receiving unit in the family room (the two rooms where he spends the most time). The unit in the bedroom is a larger and includes an alarm clock, a bed shaker, and a phone jack. He plugs a table lamp into it. When one of the transmitters activates the receiver , the light flashes in a specific pattern for that transmitter and the bed shaker vibrates. It has a row of indicator lights on the front, with icons indicating which transmitter is alerting as well. The unit in the family room is smaller. It has a jack for a lamp. It, too, has the row of indicator lights across the front. The master unit in the bedroom sends a signal to this unit so that the light flashes in this room too. He has a variety of transmitters placed throughout the house. At the front door, he has a remote doorbell and a motion sensor. This way he knows when someone is at the door or when someone enters the house. He uses a baby sound monitor (one that matches this system) for household timers. When any of the transmitters are set off, the lamps will flash a specific pattern, the bed shaker will vibrate, and the lights on the front panel will light up indicating which transmitter was activated. The master unit even has a pager on it, so if you are in bed, you can press a button on the unit and get someone's attention in another room in the house. But what if Jim is in the kitchen or in the front yard? He could purchase additional receivers (they are about $60 each); even more versatile, though, are the personal receivers that vibrate when activated. It too has a panel of lights to indicate which transmitter was activated. He can be in the house or yard within 100 feet of any transmitter and be alerted.

Some systems have personal receivers that are accessible to individuals with visual impairments in addition to hearing loss. After the receiver first vibrates, the individual hits one of 4 buttons in a learned order. The unit will re-vibrate when the button for the activated transmitter is pressed.

These systems offer more complete coverage of the home, but are also more expensive. However, the pieces can be purchased individually. The bedroom unit with the doorbell, phone jack, and bed shaker, costs about $150.00. Extra remote receivers (such as the one in the family room and the personal receiver) are about $65.00. (The personal receiver for deaf-blind individuals is about $83.00) The various transmitters range from $43.00 to $65.00. The range for these devices varies with the brand, but is usually around 80-100 feet.

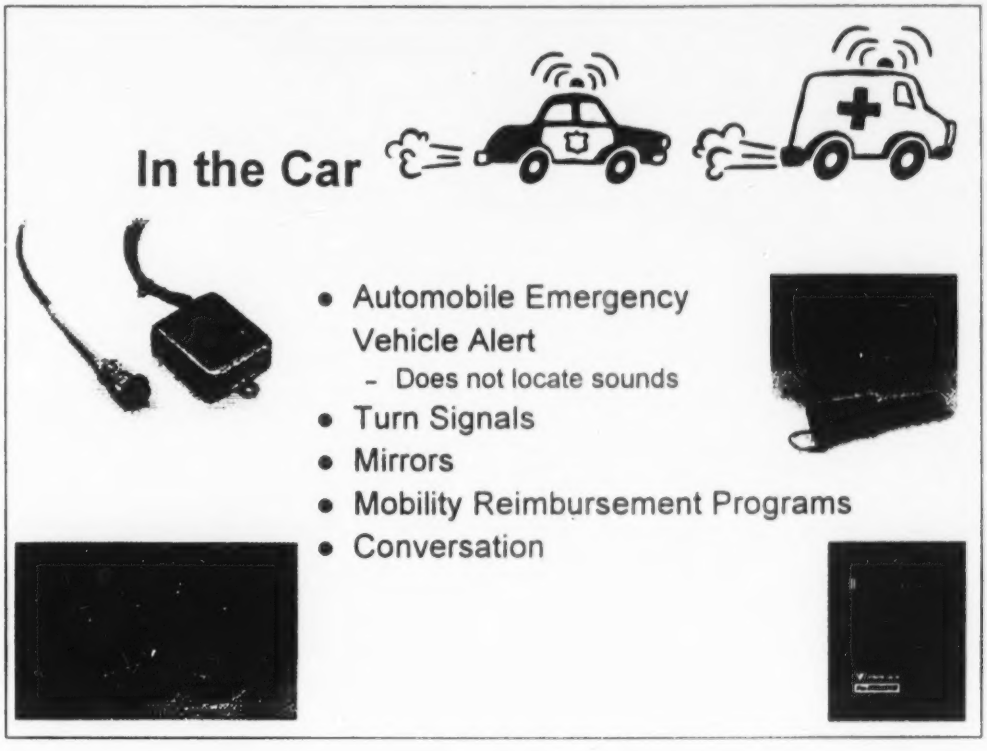
Hearing Dogs

- http://www.assistance-dogs-intl.org
- http://www.dogsforthedeaf.org/
- http://www.pawswithacause.org/
- http://adai.org
- Service Dogs e-mail list
  - majordomo@acpub.duke.edu
  - subscribe service-dogs
- Assistance Dog Model State Law
  - http://www.assistance-dogs-intl.org/model.html

No discussion of alerting devices would be complete without including hearing dogs for the deaf. These specially trained dogs are identifiable by orange-colored service dog vest. As with guide dogs used by individuals with visual impairments, these dogs must be welcomed in public places.

In the home, hearing dogs are trained to alert their owners to specific sounds. They come and get their owners and lead them to the noise (e.g., doorbell, phone, kitchen timer, baby crib). They are very useful outside the home as well. They alert their owners when someone calls their name, or to noises in the environment that may keep their owners out of harm's way.

The web pages listed above will provide information on a variety of service dog projects. There are also e-mail lists devoted to the topic.



There are many signals one needs to hear in the car. Sounds announce that the keys are still in the ignition, a door is ajar, the turn signal on, or that an emergency vehicle is approaching. Hearing outside sounds can be very difficult, as cars are often either very noisy, or almost sound proofed.

A variety of devices are available for use in the car. These signals can be converted to a flashing light, louder sound in a different frequency, or vibrations. For example, there are devices that cause the blinker to become louder the longer it is left on (unless the brake is hit). In the case of emergency vehicles, devices can be permanently or temporarily installed in the car. A microphone attaches to window and measures the dB level. Any sound over a specific dB level (some at 66 dB, others at 75 dB) causes the alarm to go off. However, these devices do not allow the individual to determine where sound is coming from. These devices run from $90 to $200.

Many automobile companies offers a Mobility Reimbursement Program. These programs provide assistive equipment in the car, and reimburse the customer for the equipment and installation, and have been available from General Motors, Saturn, and Ford, to name a few. Before purchasing a new car, check with dealers to determine if this is available, what the stipulations are, and whether the reimbursements are partial or full.

Finally, road noise alone makes conversation very difficult to hear in a car. On the right are images of the PockeTalker and the Sound Wizard. These devices have a microphone and a head set or some other device to get the sound to the ear, and a volume control. These assistive listening devices make it much easier to hear in noisy locations, such as the car or restaurants. These can be purchased for around $120.00.

Putting It All Together

- Evaluate your needs
  - Mode of reception
  - Number of rooms
  - Space
  - Power supply
- Thumb through catalogs
- Get tips from others
- Use return policy
- Use as gift suggestion

Alerting devices will only be used as long as they suit the individual's needs. If they are inconvenient, only work for some situations, or bother other people in the home or office, they will end up in a drawer collecting dust. Each person must evaluate his or her needs in each environment to determine what might work best in that situation.

The optimal mode of reception is an important consideration. Most auditory signals can be made louder or of a different pitch, or be converted to a visual or a tactile signal. Are very loud ringers feasible? Are napping children or thin walls a consideration? What about location? What about nighttime when hearing aids are likely to be off? Will the chosen devices get the individual's attention? What about space considerations? What about the dexterity required to change batteries? Finally, how many wall outlets and phone outlets are available?

One of the best ways to learn about the different devices is to thumb through catalogs. These catalogs are available on the internet, or by calling and requesting them. A list of manufacturers, their toll-free numbers and their websites is available on the NWOC website at http://www.wou.edu/nwoc/ald.htm. Ask the sales representative for information about the devices, or go to local Self Help for Hard of Hearing Persons (SHHH) meetings to ask people how well the devices worked for them. Any device that is purchased that does not meet the individual's needs should be sent back. Don't buy anything from any company that does not have a return policy. Finally, take advantage of gift opportunities. Ask for them as presents from friends and relatives for birthdays or holidays.

Alternative Sources & Statutes

- Student Housing
- Vocational Rehabilitation
- Fair Housing Act Amendments
  - http://www.hud.gov/fhe/fheo.html
- Smoke Detectors for Hearing Impaired
  - http://members.tripod.com/~firesafety/index-2.html
  - 24 CFR Parts 207 et al.
- Americans with Disabilities Act
  - ADA Hotline-800-949-4232

Depending on each individual's situation, there may be other options available. For students living on campus, the university or school program should supply the devices necessary to make dorm rooms accessible. The devices do, however, belong to the university. When the student leaves the campus, the devices stay there for the next student.

Some individuals will be able to get some of the devices through the state Vocational Rehabilitation Division. For example, alarm clocks are necessary to get to work on time; for some jobs, employees need to be able to receive calls or have meetings from home. In these cases, VR may supply or help supply the devices.

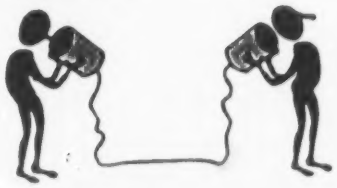
The Fair Housing Act Amendments (PL 100-430, approved September 13, 1988) amended title VIII of the Civil Rights Act of 1968 to add prohibitions against discrimination in housing on the basis of disability and familial status. FHAA requires owners of housing facilities to make reasonable exceptions in their policies and operations to afford people with disabilities equal housing opportunities. Thus, housing units with a 'no pets' policy must allow service animals for individuals with disabilities. While the FHAA requires landlords to allow modifications to housing units to allow access for individuals with disabilities, these modifications may be the responsibility of the tenant. In order to request an accommodation, a letter from a physician stating that a disability is present, and the requested accommodation is necessary because of this disability. For more information, contact the Fair Housing Enforcement Center (check the blue government pages in the phone book).

In addition, HUD (Housing and Urban Development) has developed regulations for smoke detectors for persons who are hard of hearing and deaf. These regulations apply to any rental dwelling unit assisted or insured by HUD, and to public and Indian housing dwelling units. The fire safety link listed above provides information on how to search 24 CFR to find the regulations about smoke detectors. Smoke detectors are the responsibility of the landlord, and they must be interconnected to permanently installed units. Stand-alone portable are not allowable in the regulations.

Accommodations on the job, in the work environment, and in public places are covered by the Americans with Disabilities Act. General inquiries can be made to the ADA hotline at 800-949-4232

Contact Information

Cheryl D. Davis, Ph.D., Coordinator
Northwest Outreach Center
Regional Resource Center on Deafness
Western Oregon University
Monmouth OR 97361
503-838-8642 (v/tty)
503-838-8228 (fax)
nwoc@wou.edu
http://www.wou.edu/nwoc



NWOC offers other training modules about assistive listening devices, telecommunications options and speech-to-text accommodations. For more information, contact NWOC through any of the methods above.

Consumer groups, such as Self Help for Hard of Hearing Persons (SHHH) and the Association of Late Deafened Adults (ALDA), are also great sources of information. Their web pages (www.shhh.org and www.alda.org) provide info on meetings of different chapters across the country. SHHH also has an on-line catalog of inexpensive training materials related to living with hearing loss. When you join SHHH, you receive a subscription to Hearing Loss Journal. Every issue of this journal provides helpful information for living with hearing loss, including information on the latest technology.

Other relevant SHHH publications include (ordering information on their website):

The National Directory of Hearing Assistance Technology Assistive Device Demonstration Centers

Assistive Technology for your Car

Hearing Dogs in Public

The Hearing Dog Team: Making it work

Assistive Devices: Doorways to Independence (Video)